Notes on the Myrmecophiles found with Acanthomyops (Donisthorpea) brunneus, Latr., in Britain.

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It will be remembered that my friend Dr. N. H. Joy first discovered the tree-ant, *A.* (*D.*) *brunneus*, in Britain near Theale, in Berkshire, on January 21st, 1923, and I brought it forward into the British list [Donisthorpe, 1923]. Subsequently, in the same year, he found it inhabiting Windsor Forest; this I also recorded [Donisthorpe, 1924 (a)], and in these two papers I gave an account of the habits of the ant, and a list of the myrmecophiles found with it on the Continent. This year I have devoted a considerable amount of time in hunting for, and investigating, nests of *brunneus* in the latter locality, and carefully studying the guests of this ant.

Although I have been very successful (having added at least three insects to the British list), it has only been by means of extremely hard work, patience, and perseverance. It is not sufficient just to find a tree in which the ant occurs, as perhaps in one day out of a hundred trees examined, in five it may be present, but three or four of these will be quite unworkable, and of the remainder, though apparently suitable, in only one any myrmecophiles may be found, or in none! Another difficulty is that a tree, which is easily worked, will be found to be deserted on the next visit—in fact a very little disturbance of the ants will always cause this—and new trees containing the ant must be hunted for. In this way I have tramped all over the district; I divided it into sections, and must have examined many hundreds of trees in all. It is quite useless to set traps, or pack a tree with grass, etc., as one does with *A.* (*D.*) *fuliginosus*; both Joy and I have tried this, but on the next visit both the ants and anything that may have been with them have simply disappeared. The ant also occurs in the Park, but here the trees are too well looked after, the lowest branches and twigs cut off, old decayed trees cut down, and their roots blown up and carted away.

I am hopeful that the following results of my labours are of value as a real addition to the knowledge of our myrmecophilous fauna; and do not merely represent the capture of a few rare species to fill up gaps in a collection.

First to deal with the ant itself, and its connection with other *Formicidae*:—

A. (*D.*) *brunneus* is not confined to any particular tree, as I have found it present in oak, elm, ash, beech, poplar, and maple. On two occasions I was fortunate enough to find the winged sexes, *viz.*, on June 14th and June 25th. On the former several ♂ ♂ and one winged ♀ occurred in cells under the bark of an oak tree; but on the latter date many ♂ ♂ and a number of winged ♀ ♀ were running about on the surface of another oak tree, and in the crevices of the bark; some also being present under the bark. The ♀ ♀ were in a very excited state, running all over the tree, and endeavouring to drag back some of the winged forms beneath the bark. The time was about 12 o'clock noon, "summer time." The marriage flight is recorded for June and July, and Schenck [1852] says it takes place between five o'clock and eight o'clock in the morning. I should judge that on this occasion the sexes were anxious to leave the tree, but were being restrained by the ♀ ♀;

the time, or temperature, or some other reason best known to themselves, being unsuitable. One ☿ remained for a long time standing motionless on the tree, holding in its jaws a dead deälated ♀, which was hanging down in a vertical position, not touching the tree. Not infrequently little colonies of *Leptothorax nylanderi*, Först., were found inhabiting the same tree in which *brunneus* was present. Their nests consist of little cells in, and under, the bark, and these tiny ants were sometimes walking freely about in the runs of the larger species.

On one occasion I found a mixed colony of *A.* (*D.*) *brunneus* and *A.* (*C.*) *umbratus* in an ash tree. The *umbratus* ☿ ☿ occurred in the lower part of the tree, but the *brunneus* ☿ ☿ were running all over it, mixing freely with the yellow ants. When examples of both species were placed together in small tubes and boxes, no fighting took place, and the ants were quite friendly together. It would thus appear that an *umbratus* ♀ had founded her colony in a *brunneus* nest at the foot of the tree, in the same way as do *mixtus* and *umbratus* ♀ ♀ in nests of *A.* (*D.*) *alienus*, and *A.* (*D.*) *niger*!

The food of this ant consists chiefly, no doubt, of the excreta of their large aphides (about which I shall have a good deal to say presently); but I have seen the ☿ ☿ carrying Psocids, and other small insects in their jaws.

We now come to the other inhabitants of the nests of this interesting ant. It must be understood that all the following species were found with *brunneus*; and in Windsor Forest, unless otherwise stated. Those species marked with an asterisk were mentioned by me in the list I gave [1923] of the guests of this ant on the Continent.

(*To be continued.*)

Digne and the Basses Alpes in July, 1923.

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(*Concluded from page 106.*)

July 19th. Arising at 6 a.m. and after a few snapshots of the lake bathed in the early morning sunlight, I began to make the descent about 7 a.m. and reached Allos about midday. Below the lake I took two fine specimens of *E. stygne* and one or two moths. On the first meadow that I reached, irrigated by a beautiful overflowing stream, I netted one or two *Brenthis pales* and a grey skipper. Just below the first châlet insects became more abundant and *P. argus* (*aegon*), *C. minimus*, and *C. iphis* were swarming. I also took *E. stygne*, *E. oeme* ♂, *E. gorge* ♀, *E. ceto*, *E. mnestra*, and *E. epiphron*. Between this and the bridge over the river, I got some fine Hymenoptera including *Discolia quadripunctata*, *Chalicodonia muraria*, *Ichneumon xanthorius* and *Allantus olivacea*; and the Diptera *Tabanus bovinus*, *Fabricia ferox* and *Syrphus vitripennis*.

By the large meadow just above the bridge, *Argynnis niobe* var. *eris* was flying and *Polyommatus eros* was taken, while *Colias phicomone* was missed. The Coleoptera I took just here were *Cicindela hybrida*, *Clytus arietis* and *Silpha quadripunctata*.. As time was urgent and I had only a few more boxes I pushed on to catch the autobus from Allos, which left about 12.30 for Thorême-Haute. Just before reaching Allos, I met with *Heodes virgaureae*. But I was somewhat